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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/577,306	05/24/2000	Bastiaan Hendrik Bakker	F3238(C)	4727
201	7590	04/13/2004	EXAMINER	
UNILEVER PATENT DEPARTMENT 45 RIVER ROAD EDGEWATER, NJ 07020			SORKIN, DAVID L	
			ART UNIT	PAPER NUMBER
			1723	

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/577,306	Applicant(s) BAKKER ET AL.	
	Examiner David L. Sorkin	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5,6,13-16 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5,6,15,16 and 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 March 2004 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rauwendaal (US 4,798,473) in view of Zakic (US 4,541,792). Rauwendaal ('473) discloses a single screw extruder (see col. 6, lines 15-23 and 51-53) comprising an extruding screw (10) and a barrel (33) characterized by between 2 and 6 thread starts (see col. 6, lines 19-21) and a pitch angle within the claimed range of 32-42 (see col. 5, lines 23-25, "20° to 40°" and Fig. 4 where specific values such as 35 degrees and 40 degrees are disclosed). Rauwendaal ('473) does not disclose a cooling circuit. Zakic ('792) teaches providing a screw extruder with a cooling circuit comprising a cooling liquid (see col. 1, lines 5-20). It is considered that it would have been obvious to one of

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ordinary skill in the art to have provided the extruder of Rauwendaal ('473) with a cooling circuit because Zakic ('792) explains that "it is common to provide an extruder barrel with a jacket through which a heat transfer medium, usually water, is pumped" (col. 1, lines 12-15) and further explains that may be "hot or cold" (see col. 1, lines 16-18).

4. Claims 16 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauwendaal (US 5,932,159) in view of Zakic (US 4,541,792). Regarding claim 22, Rauwendaal ('159) discloses a single screw extruder (see col. 7, lines 20-26) comprising an extruding screw (28) and a barrel (18) characterized by between 2 and 6 thread starts (see col. 8, lines 6-10). A pitch range (30-90 degrees) which overlaps the claimed range is disclosed (see col. 10, lines 60-64). In cases where claimed ranges "overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists" (*In re Wertheim*, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 16 USPQ2d 1934 (Fed. Cir. 1990)). It is further noted that according to the instant specification, the claimed range of 32-42 degrees is not critical, but merely "preferable". Rauwendaal ('159) does not disclose a cooling circuit. Zakic ('792) teaches providing a screw extruder with a cooling circuit comprising a cooling liquid (see col. 1, lines 5-20). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('159) with a cooling circuit because Zakic ('792) explains that "it is common to provide an extruder barrel with a jacket through which a heat transfer medium, usually water, is pumped" (col. 1, lines 12-15) and further explains that may be "hot or cold" (see col. 1, lines 16-18). One of ordinary skill in the

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art would have been additional motivated to have combined the teachings of these references because Rauwendaal ('159) states "mixing should be done at as low a temperature as possible" (col. 2, lines 9-10). Regarding claims 21 and 23, Rauwendaal ('159) discloses a single screw extruder (see col. 7, lines 20-26) comprising an extruding screw (28) and a barrel (18). A pitch range (30-90 degrees) which overlaps the claimed range is disclosed (see col. 10, lines 60-64). In cases where claimed ranges "overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists" (*In re Wertheim*, supra.; *In re Woodruff*, supra.). It is further noted that according to the instant specification, the claimed range of 32-42 degrees is not critical, but merely "preferable". Rauwendaal ('159) also discloses a length to diameter ratio which overlaps the claimed ranges (see col. 10, lines 60-65). Rauwendaal ('159) does not disclose a cooling circuit. Zakic ('792) teaches providing a screw extruder with a cooling circuit comprising a cooling liquid (see col. 1, lines 5-20). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('159) with a cooling circuit because Zakic ('792) explains that "it is common to provide an extruder barrel with a jacket through which a heat transfer medium, usually water, is pumped" (col. 1, lines 12-15) and further explains that may be "hot or cold" (see col. 1, lines 16-18). One of ordinary skill in the art would have been additional motivated to have combined the teachings of these references because Rauwendaal ('159) states "mixing should be done at as low a temperature as possible" (col. 2, lines 9-10). Regarding claim 16, channel width and height are recognized a variable to be optimized according to equations provided (see col. 10, lines 1-16). It is

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considered that it would have been obvious to one of ordinary skill in the art to have optimized these variables according to the equations provided. As held in *In re Aller*, supra., "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation".

5. Claims 5, 6, 15, 16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauwendaal (US 5,932,159) in view of Fels et al. (US 5,345,781). Regarding claims 20, Rauwendaal ('159) discloses a single screw extruder (see col. 7, lines 20-26) comprising an extruding screw (28) and a barrel (18) characterized by from 3 to 4 thread starts (see col. 7, lines 20-26). A pitch range (30-90 degrees) which overlaps the claimed range is disclosed (see col. 10, lines 60-64). In cases where claimed ranges "overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists" (*In re Wertheim*, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 16 USPQ2d 1934 (Fed. Cir. 1990)). It is further noted that according to the instant specification, the claimed range of 32-42 degrees is not critical, but merely "preferable". Rauwendaal ('159) does not disclose a cooling circuit comprising liquid ammonia. Fels ('781) teaches providing a screw extruder with a cooling circuit comprising ammonia (see col. 3, lines 45-47; col. 11, lines 10-17). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('159) with a cooling circuit comprising liquid ammonia because Rauwendaal ('159) states "mixing should be done at as low a temperature as possible" (col. 2, lines 9-10) and Fels ('781) teaches that a liquid ammonia cooling circuit provides an extruder with such conditions (see col. 3, lines 45-47; col. 11, lines 10-17). Regarding claim 22,

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Rauwendaal ('159) discloses a single screw extruder (see col. 7, lines 20-26) comprising an extruding screw (28) and a barrel (18) characterized by between 2 and 6 thread starts (see col. 8, lines 6-10). A pitch range (30-90 degrees) which overlaps the claimed range is disclosed (see col. 10, lines 60-64). In cases where claimed ranges "overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists" (*In re Wertheim*, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 16 USPQ2d 1934 (Fed. Cir. 1990)). It is further noted that according to the instant specification, the claimed range of 32-42 degrees is not critical, but merely "preferable". Rauwendaal ('159) does not disclose a cooling circuit comprising a cooling liquid. Fels ('781) teaches providing a screw extruder with a cooling circuit comprising a cooling liquid (see col. 3, lines 45-47; col. 10, lines 40-47; col. 11, lines 10-17; col. 13, lines 23-27). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('159) with a cooling circuit comprising a cooling liquid because Rauwendaal ('159) states "mixing should be done at as low a temperature as possible" (col. 2, lines 9-10) and Fels ('781) teaches that a liquid ammonia cooling circuit provides an extruder with such conditions (see col. 3, lines 45-47; col. 10, lines 40-47; col. 11, lines 10-17; col. 13, lines 23-27). Regarding claims 5 and 15, Rauwendaal ('159) discloses a length to diameter ratio which overlaps the claimed ranges (see col. 10, lines 60-65). Regarding claim 6, channel width and height are recognized a variable to be optimized according to equations provided (see col. 10, lines 1-16). It is considered that it would have been obvious to one of ordinary skill in the art to have optimized these variables according to the equations provided. As held

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in *In re Aller*, 105 USPQ 233, “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation”. Regarding claims 21 and 23, Rauwendaal ('159) discloses a single screw extruder (see col. 7, lines 20-26) comprising an extruding screw (28) and a barrel (18). A pitch range (30-90 degrees) which overlaps the claimed range is disclosed (see col. 10, lines 60-64). In cases where claimed ranges “overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists” (*In re Wertheim*, supra.; *In re Woodruff*, supra.). It is further noted that according to the instant specification, the claimed range of 32-42 degrees is not critical, but merely “preferable”. Rauwendaal ('159) also discloses a length to diameter ratio which overlaps the claimed ranges (see col. 10, lines 60-65). Rauwendaal ('159) does not disclose a cooling circuit comprising a cooling liquid. Fels ('781) teaches providing a screw extruder with a cooling circuit comprising a cooling liquid (see col. 3, lines 45-47; col. 10, lines 40-47; col. 11, lines 10-17; col. 13, lines 23-27). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('159) with a cooling circuit comprising a cooling liquid because Rauwendaal ('159) states “mixing should be done at as low a temperature as possible” (col. 2, lines 9-10) and Fels ('781) teaches that a liquid ammonia cooling circuit provides an extruder with such conditions (see col. 3, lines 45-47; col. 10, lines 40-47; col. 11, lines 10-17; col. 13, lines 23-27). Regarding claim 16, channel width and height are recognized a variable to be optimized according to equations provided (see col. 10, lines 1-16). It is considered that it would have been obvious to one of ordinary skill in the art to have optimized

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these variables according to the equations provided. As held in *In re Aller*, supra., “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation”.

Response to Arguments

6. Applicant argues that “the Office points to no teaching in either of Rauwendaal’s references that his extruders should or could be used for applications wherein cooling is required”; however, Rauwendaal (‘159) explicitly states “mixing should be done at as low a temperature as possible” (col. 2, line 9-10).

7. Zakic (‘792) explains that it is “common” to provide extruders with cooling circuits comprising cooling liquids; therefore, even if a particular extruder references does not discloses such a cooling circuit, one of ordinary skill in the art would have considered such a difference between the prior art and a claimed invention to have been obvious.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 571-272-1148. The examiner can normally be reached on 9:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David L. Sorkin
Examiner
Art Unit 1723

David Sorkin